

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)	
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Ho-Suk KIM et al.)	
)	Group Art Unit: 1795
Application No.: 10/542,642)	
)	
Filed: July 19, 2005)	Examiner: DAVIS, Patricia A.
)	
For: SEALING STRUCTURE FOR)	
POLYMER ELECTROLYTE FUEL)	Confirmation No.: 1718
CELL)	
Commissioner for Patents		
P.O. Box 1450		
Alexandria, VA 22313-1450		

Sir:

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Applicants request a pre-appeal brief review of the rejections in the Final Office Action mailed on March 15, 2010, the period for response to which extending through June 15, 2010. This Request is being filed concurrently with a Notice of Appeal, in accordance with the Official Gazette Notice of July 12, 2005.

Remarks begin on page 2 of this paper.

REMARKS

Claims 1 and 3-12 are currently pending, of which claims 1 and 3-10 are under examination and claims 11 and 12 are withdrawn.

Claims 1, 3-6, 9, and 10¹ were rejected under 35 U.S.C. § 103(a) as being unpatentable over Schilling et al. (U.S. Patent No. 6,338,492, hereafter "Schilling"); claim 7 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Schilling in view of Sasaki et al. (U.S. Patent No. 6,337,120, hereafter "Sasaki"); and claim 8 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Schilling in view of Sakumato et al. (U.S. Publication No. 2002/0106954 A1, hereafter "Sakumato"). Applicants traverse these rejections.

Claim 1 recites a sealing structure including "a gasket plate interposed between the bipolar plate and the membrane electrode assembly" (emphasis added). Applicants' sealing structure, which is illustrated in Applicants' Fig. 4, includes a bipolar plate 100 having a sealing member, a membrane electrode assembly (MEA) 300, and a gasket plate 200 interposed between the bipolar plate 100 and the MEA 300.² Moreover, sealing grooves 110 and 110' and the anchor groove 112 are formed on the bipolar plate 100, and these grooves are filled with a sealing member such as rubber. See Applicants' Figs. 2 and 3 and their corresponding description in the specification.

Schilling discloses a fuel cell 1 which is made of bipolar plates 2 and 3 and an interposed MEA (membrane electrode assembly) 4. See col. 3, lines 41-43, and Fig. 1.

¹ The rejection on page 2 of the Final Office Action does not state that claim 10 is rejected, but the claim is discussed on page 6.

² In making reference to the specification and drawings set forth herein, it is to be understood that Applicants are in no way intending to limit the scope of the claims to the exemplary embodiments shown in the drawings and described in the specification. Rather, Applicants expressly affirm that they are entitled to have the claims interpreted broadly, to the maximum extent permitted by statute, regulation and applicable case law.

Sealing elements 10 are inserted into grooves 9 of bipolar plates 2 and 3. See col. 3, lines 44-45. Sealing elements 10 are injected and are made of elastomeric material. See col. 3, lines 48-49 and 57-58. As illustrated in Fig. 1, the fuel cell of Schilling appears to include two bipolar plates 2 and 3 and the MEA 4 interposed between the bipolar plates 2 and 3, but does not disclose or suggest a gasket plate interposed between the MEA 4 and the bipolar plate 2 or 3. In Schilling, the sealing elements 10, which are on the grooves 9 on the bipolar plates 2 and 3, are found between the MEA 4 and the bipolar plate 2 or 3, but no gasket plate is located between the MEA 4 and the bipolar plate 2 or 3.

Furthermore, the sealing element 10 of Schilling is retained in blind holes 16 by way of plugs 15, which are formed during the injection process. See col. 4, lines 7-9. The blind holes 16 are formed into the bipolar plate 2, and the sealing elements 10 fill the blind holes 16 so that the sealing elements 10 are anchored to the bipolar plate 2. See col. 4, lines 13-14, and Fig. 3B. The Examiner alleged that Schilling teaches "a plug (gasket 15) interposed between said bipolar plate (2) and a membrane electrode assembly (MEA 4; see figures 1 and 3B)." Final Office Action at page 2. Thus, it appears that the Examiner alleges the plug 15, shown in Fig. 3B of Schilling, corresponds to the claimed "gasket plate interposed between the bipolar plate and the membrane electrode assembly," recited in Applicants' claim 1. However, the plug 15 of Schilling that is formed in blind holes 16 and 18 clearly does not correspond to the claimed "gasket plate." Rather, the plug 15 are plugs formed into the bipolar plate 2 to anchor the sealing elements 10 formed on its surface.

Applicants' representative conducted a telephone interview with the Examiner and her Supervisor on May 27, 2010, in an effort to point out the above deficiency of Schilling. During the telephone interview, the Examiner contended that the sealing element 10 shown in Figs.

3A and 3B of Schilling corresponds to the claimed "gasket plate," and that the sealing element 10 is considered "a long and narrow plate." However, as shown in Figs. 1 and 3A, the sealing element 10 only fills the groove 9 of the bipolar plates 2 and 3, but is not itself a gasket plate. Thus, Schilling fails to disclose or suggest, at least, "a gasket plate interposed between the bipolar plate and the membrane electrode assembly," as recited in Applicants' claim 1.

Moreover, Schilling additionally fails to teach or suggest an "anchor groove extending toward an outer edge of the bipolar plate," as recited in claim 1 (emphasis added). Applicants' Figs. 2 and 3 illustrate a bipolar plate 100 including a sealing groove 110 and an anchor groove 112. As shown in region A, the anchor groove 112 is coupled to a periphery of the sealing groove 110 and extends toward an outer edge of the bipolar plate 100.

The Examiner alleged that blind holes 16 and 18 of Schilling correspond to the claimed "anchor groove." See Final Office Action at page 2. This is not correct. Figs. 3A and 3B of Schilling show a top view of a bipolar plate 2 and a cross-section along a line A-A', respectively. As illustrated in Fig. 3B of Schilling, the blind holes 16 and 18 extend into the bipolar plate 2. That is, the blind holes 16 and 18 both extend in a thickness direction of the bipolar plate 2 instead of toward an outer edge of the bipolar plate 2. Accordingly, contrary to the Examiner's allegation, the blind holes 16 and 18 of Schilling cannot correspond to the claimed "anchor groove extending toward an outer edge of the bipolar plate," as recited in claim 1.

Sasaki and Sakumato were cited by the Examiner in connection with dependent claims 7 and 8. Even assuming that these references provide the teachings alleged by the

Examiner, which Applicants do not concede, Sasaki and Sakumato fail to overcome at least the above deficiencies of Schilling regarding claim 1.

In view of at least the above deficiencies, the Examiner has failed to determine the scope and content of the prior art and ascertain the differences between independent claim 1 and the prior art. Accordingly, the Final Office Action has not clearly articulated a reason why claim 1 would have been obvious to one of ordinary skill in view of the cited prior art references. Therefore, a *prima facie* case of obviousness has not been established for claim 1 and claims 3-10 which depend from claim 1. Applicants therefore request withdrawal of their rejection under 35 U.S.C. § 103(a).


In view of the foregoing, Applicants request a pre-appeal brief review of the rejections in the Final Office Action mailed March 15, 2010. Claims 1 and 3-10 are in condition for allowance, and Applicants request a favorable action.

Please grant any extensions of time required to enter this response and charge any additional required fees to Deposit Account 06-0916.


Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

Dated: June 15, 2010

By: 
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PRE-APPEAL BRIEF REQUEST FOR REVIEW		Docket Number (Optional) 08015.0023
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on _____ Signature _____ Typed or printed name _____	Application Number 10/542,642 First Named Inventor Ho-Suk KIM Art Unit 1795	Filed July 19, 2005 Examiner DAVIS, Patricia A.
<p>Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.</p> <p>This request is being filed with a notice of appeal.</p> <p>The review is requested for the reason(s) stated on the attached sheet(s). Note: No more than five (5) pages may be provided.</p> <p>I am the</p> <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 45%;"> <input type="checkbox"/> applicant/inventor. <input type="checkbox"/> assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. <input checked="" type="checkbox"/> attorney or agent of record. Registration number 57,127. <input type="checkbox"/> attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34 _____ </div> <div style="width: 50%; text-align: center;">  _____ Signature Selah C. Park _____ Typed or printed name (202) 408-4000 _____ Telephone number June 15, 2010 _____ Date </div> </div> <p>NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.</p>		

☐ *Total of _____ forms are submitted.

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